

**AMENDMENT**

**IN THE CLAIMS**

Please delete claims 1-4 and 8-11, amend claim 6 and add new claims 12-19 according to the proposed revision to 37 C.F.R. §1.121 concerning a manner for making claim amendments.

**REMARKS**

Claims 6-7 and 12-19 are presently pending in the captioned application with claim 6 amended, claims 12-19 newly added, claim 7 as originally pending and claims 1-4 and 8-11 being cancelled without disclaimer or prejudice as to the subject matter contained therein.

Method claim 6 has been amended to recite the transitional phrase "comprising the step of" while newly added method claims 12-19 recite limitations for a method of making a laminated film. Support for new claims 12-19 can be found in the specification at page 4, lines 12-14, page 11, lines 32 to page 12, line 5, and page 9, lines 1-2. No new matter within the meaning of §132 has been added by any of the amendments.

Applicants note that the sole purpose of the amendments are to advance prosecution of the application. Applicants specifically

preserve the right to obtain coverage relating to the now deleted subject matter in later continuation applications.

In the absence of any assertion to the contrary, Applicants acknowledge that the previous rejection of claim 6 over US 5,712,031 ("Kelch et al.") has been withdrawn.

Accordingly, Applicants respectfully request the Examiner to reconsider and allow all claims pending in this application.

**1. Rejection of Claims 1-2**  
**under 35 U.S.C. §102(b)**

The Office Action rejects claims 1-2 under 35 U.S.C. §102(b) as being anticipated by US 5,712,031 ("Kelch et al."). The Office Action states:

The KELCH et al. discloses a laminate film comprising a polyester substrate layer coated with an adhesive layer comprising a terpolymer of ethylene, 3-10 wt% ethylenically unsaturated carboxylic acid, and 3-25 wt% methyl acrylate or methacrylate, wherein the adhesive layer is applied to the substrate layer by extrusion (line 9-20, 45-50, col. 3; line 37, col. 4).

Regarding claim 1, the extrusion-laminating temperature is a product-by-process limitation and is not further limiting in as so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the

product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." [emphasis added] *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Once a product appearing substantially identical is found, the burden shifts to applicant to show a material or structural difference between the claimed product and the prior art product.

Regarding claim 2, the limitation "not more than 30 parts by weight of an ethylene/ $\alpha$ -olefin copolymer resin having a density of 840 to 900 kg/m<sup>3</sup>" does not specify a minimum amount of said copolymer and therefore the claim encompasses compositions containing zero parts by weight of the specified copolymer.

Applicants respectfully traverse the rejection because as stated in the previous Response of September 03, 2003, each and every claimed limitation is not taught by the cited reference. Therefore, Kelch et al. is not a proper §102(b) reference.

However, Applicants have deleted claims 1 and 2 for the sole purpose of advancing prosecution but specifically preserve the right to pursue the subject matter of those claims in co-pending applications.

Accordingly, Applicants respectfully submit the rejection is now moot and request the Examiner to reconsider and remove the rejection against deleted claims 1 and 2.

**2. Rejection of Claims 1-2**  
**under 35 U.S.C. §103(a)**

The Office Action rejects claims 1-2 under 35 U.S.C. §103(a) as being unpatentable over US 5,712,031 ("Kelch et al."). The Office Action states:

The KELCH et al. discloses a laminate film comprising a polyester substrate layer coated with an adhesive layer comprising a terpolymer of ethylene, 3-10 wt% ethylenically unsaturated carboxylic acid, and 3-25 wt% methyl acrylate or methacrylate, wherein the adhesive layer is extrusion coated onto the substrate layer (line 9-20, 45-50, col. 3; line 37, col. 4) and wherein the film can surface-treated prior to coating.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply a conventional surface pretreatment such as oxidation to the polyester substrate layer prior to extruding the ethylene terpolymer coating in order to improve interlayer adhesion. Regarding claim 1, the extrusion-laminating temperature is a product-by-process limitation and is not further limiting in as so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself.

The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." [emphasis added] *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Once a product appearing substantially identical is found,

the burden shifts to applicant to show an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1993). Regarding claim 2, the limitation "not more than 30 parts by weight of an ethylene/ $\alpha$ -olefin copolymer resin having a density of 840 to 900 kg/m<sup>3</sup>" does not specify a minimum amount of said copolymer and therefore the claim encompasses compositions containing zero parts by weight of the specified copolymer.

Applicants respectfully traverse the rejection because as stated in the previous Response of September 03, 2003, each and every claimed limitation is not taught by the cited reference. Moreover, evidence of unexpected results have been demonstrated.

However, Applicants have deleted claims 1 and 2 for the sole purpose of advancing prosecution but specifically preserve the right to pursue the subject matter of those claims in co-pending applications.

Accordingly, Applicants respectfully submit the rejection is now moot and request the Examiner to reconsider and remove the rejection against deleted claims 1 and 2.

**3. Rejection of Claims 1-4 and 6-11**  
**under 35 U.S.C. §103(a)**

The Office Action rejects claims 1-4 and 6-11 under 35 U.S.C.

\$103(a) as being unpatentable over US 4,732,944 ("Smith Jr.") in view of US 3,471,460 ("Rees") and Ullmann's Encyclopedia of Industrial Chemistry. The Office Action states:

SMITH, JR discloses a laminates comprising a polyester film layer, an ionomer layer, and optionally an additional plastic layer wherein the ionomer is typically derived from ethylene, (meth)acrylic acid, and/or (meth)acrylate wherein the ionomer may be partially neutralized with up to 90% of a metal cation such as sodium (Figure 11: line 62, col. 4 to line 15, col. 5: lines 43-55, col. 8; lines 38-47, col. 11) as recited in claims 1-4. However, the reference does not explicitly disclose the recited terpolymer.

REES discloses that it is well known in the art to utilize ethylene terpolymers comprising at least 50 mol% ethylene, 0.2-25 mol% unsaturated carboxylic acid, and up to 49.8 mol% of a third monomer such as methyl methacrylate or ethyl acrylate (line 30, col. 1 to line 72, col. 2) as the basis for modified resins with improved mechanical and elastic properties.

ULLMANN'S discloses that it is well known in the art to use extrusion to apply coatings to preexisting films and also that it is well known in the art to surface treat films prior to coating in order to improve interlayer adhesion and coating characteristics (section 2.4).

. . .

One of ordinary skill in the art would have selected a polar material which is compatible and adherent to the ionomer layer for use in the one or more plastic base layers of the laminate (as indicated in claims 7-9) and/or selected the degree of surface modification of said base layer(s) as indicated in claim 6 in

order to prevent delamination.

Regarding claim 6, it would have been obvious to select the extrusion-lamination temperature of the ionomer layer based on the melt properties (e.g., melting point, melt viscosity, onset of thermal crosslinking, etc.) for a given ionomer formulation resin, in order to obtain the optimum coating and mechanical properties based on the specific type of equipment used and the other materials used in the other layers.

Applicants respectfully traverse the rejection over remaining method claims 6 and 7 because all the claimed limitations have not been taught by the cited references. In particular, one of ordinary skill in the art would not have been motivated to vary extrusion temperatures or the density of the ethylene/ $\alpha$ -olefin component based on the teachings of the cited references. Applicants also rebut any presumption of the *prima facie* case with evidence of unexpected results, which are provided with a sufficient basis such that the criticality of the claimed limitations cover all the claimed compositions.

Turning to the rule, the Federal Circuit held that a *prima facie* case of obviousness must establish: (1) some suggestion or motivation to modify the references; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d

1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

However, even if a *prima facie* case of obviousness has been established, secondary considerations such as commercial success, long felt but unsolved need, failure of others, and unexpected results may nevertheless give rise to a patentable invention. Graham v. John Deere Co., 148 U.S.P.Q. 459 (1966). For example, evidence such as superiority in a property the compound shares with the prior art can rebut a *prima facie* case of obviousness. See In re Chupp, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987).

In the present application, remaining claim 6 recites a method of producing a laminated film by extrusion-laminating a mixture resin having 30 parts by weight of an ethylene/ $\alpha$ -olefin copolymer resin having a density of 840 to 900 kg/m<sup>3</sup> at an extrusion temperature of from 280 to 340°C as measured just under T-die. However, nowhere do the cited references teach the limitation of an extrusion temperature of from 280 to 340°C as the resin temperature measured just under T-die or a limitation regarding the density of the ethylene/ $\alpha$ -olefin component.

As noted by the Office Action, Smith Jr. only discloses laminates while Rees discloses ethylene terpolymers and Ullmann's discloses that it is well known in the art to use extrusion to



apply coatings to preexisting films. Although the Office Action asserts that it would be been obvious to select the extrusion temperature based on the melt properties, Applicants note that the prior art teaches extrusion temperatures that are significantly lower than the claimed range.

For example, US 5,712,031 ("Kelch et al.") discloses an extrusion temperature at 425° F, which is 216° C. The presently claimed temperature range, on the other hand, is from 280 to 340°C. Clearly, one of ordinary skill at the time of invention would not have been motivated to vary extrusion temperatures. Therefore, Applicants note that claimed range is not merely optimization of results-effective variables but an unobvious improvement.

Even if a *prima facie* case has been established, Applicants rebut the presumption with evidence of unexpected results providing a sufficient basis of criticality for all the claimed compositions.

In particular, Comparative Examples 1 and 2 of the specification demonstrate that an interlayer adhesion strength dramatically deteriorates if the extrusion temperature range is outside the presently claimed range. For example, if the extrusion temperature is just 10° C less at 270° C (Comparative Example 1), the adhesion strength lowers to less than 0.1N/15 mm whereas if the extrusion temperature is just 10° C more at 350°C then the adhesion

strength was so low it could not even be evaluated (Comparative Example 2).

Regarding the Office Action's assertion that criticality for all the claimed compositions have not been shown for all the compositions, Applicants note Comparative Examples 6, 7, 8, 9 and 10, which provide a sufficient sampling of all the representative compounds encompassed by the presently pending limitations. For example, Comparative Example 6 covers compositions having 90% by weight of (A-2) copolymer and 10 part by weight of (C-3) ethylene/ $\alpha$ -olefin copolymer while Comparative Example 7 covers compositions having 45% by weight of (A-1) copolymer, 45% by weight of (A-2) copolymer and 10 part by weight of (C-1) ethylene/ $\alpha$ -olefin copolymer.

Comparative Examples 8-10 similarly cover other various forms of the claimed compositions. Notably, the various starting resin materials are disclosed on page 14 of the specification. For example, A-1 is disclosed as an ethylene/methacrylic/isobutyl acrylate copolymer while C-1 is disclosed as an ethylene/ $\alpha$ -olefin copolymer, wherein the  $\alpha$ -olefin is a 1-octene having a density of 870 kg/m<sup>3</sup> and a MFR of 35 g/10min. Furthermore, differing amounts of methacrylic acid ester for esters other than isobutyl acrylate, are shown by B-1, which contains a methacrylic acid content of 4% by weight and B-2, which contains an acrylic content of 5% by

weight. Clearly, Applicants have provided a sufficient sampling of various examples that show that the criticality of the claimed extrusion temperature range covers the presently claimed compositions.

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the cited references and respectfully request the Examiner to reconsider and withdraw the rejection of the presently pending claims under 35 U.S.C. §103.

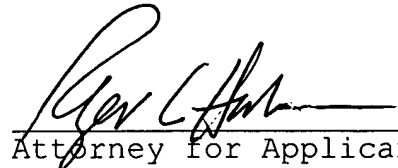
#### CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. The Examiner is therefore respectfully requested to reconsider and withdraw the rejection of the pending claims and allow the pending claims. Favorable action with an early allowance of the claims pending is earnestly solicited.

Respectfully submitted,

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